

In the Claims

Claims 1-23 (canceled).

Claim 24 (original): A method of forming a magnetoresistive memory device, comprising:

- forming a trench in an insulative material;
- partially filling the trench with a first magnetic material to narrow the trench;
- at least partially filling the narrowed trench with a conductive material;
- forming a second magnetic material over the conductive material;
- forming a non-magnetic layer over the second magnetic material;
- forming a third magnetic material over the non-magnetic layer;
- incorporating the first and second magnetic materials, together with the conductive material, into a sense portion of the magnetoresistive memory device; and
- incorporating the third magnetic material into a reference portion of the magnetoresistive memory device.

Claim 25 (original): The method of claim 24 wherein the non-magnetic layer comprises a dielectric material.

Claim 26 (original): The method of claim 24 wherein the non-magnetic layer comprises Al_2O_3 .

Claim 27 (original): The method of claim 24 wherein the first and second magnetic materials are identical to one another.

Claim 28 (original): The method of claim 24 wherein the first and second magnetic materials are different from one another.

Claim 29 (original): The method of claim 24 further comprising patterning the second magnetic material, non-magnetic layer, and third magnetic material in a common patterning step.

Claim 30 (original): The method of claim 24 further comprising:

forming a spacer layer over the third magnetic material;

forming a fourth magnetic material over the spacer layer;

forming a protective non-magnetic material over the fourth magnetic material;

and

patterning the second magnetic material, non-magnetic layer, third magnetic material, fourth magnetic material, spacer layer and protective non-magnetic material in a common patterning step.

Claim 31 (original): The method of claim 24 wherein the trench extends in a first direction; and further comprising:

patterning the second magnetic material, non-magnetic layer, and third magnetic material in a common patterning step to form a stack; and

forming a conductive line over the stack, the conductive line extending in a direction substantially perpendicular to the first direction.

Claim 32 (original): The method of claim 24 wherein the trench extends in a first direction; and further comprising:

first patterning the second magnetic material, non-magnetic layer, and third magnetic material in a common patterning step to form a line comprising the second magnetic material, non-magnetic layer and third magnetic material; the line extending along and over the conductive material;

second patterning the third material to form a plurality of spaced blocks over the conductive material; and

forming a plurality of spaced conductive lines over the spaced blocks, the conductive lines extending in a direction substantially perpendicular to the first direction.

Claim 33 (original): The method of claim 32 wherein further comprising removing at least some of the second magnetic material from between the spaced blocks.

Claim 34 (original): The method of claim 32 wherein the non-magnetic material is patterned with the third magnetic material during the second patterning.

Claim 35 (original): The method of claim 32 wherein the first magnetic material is different than the second magnetic material.

Claim 36 (original): The method of claim 32 wherein the first magnetic material is different than the second magnetic material; wherein the first magnetic material comprises cobalt, chromium and niobium; and wherein the second magnetic material comprises iron and nickel.

Claim 37 (original): The method of claim 32 further comprising removing at least some of the first magnetic material from between the spaced blocks.

Claim 38 (original): The method of claim 24 wherein the trench extends primarily in a first direction and comprises curvateous sidewalls; the method further comprising:

patterning the second magnetic material, non-magnetic layer, and third magnetic material in a common patterning step to form a line comprising the second magnetic material, non-magnetic layer and third magnetic material; the line extending along and over the conductive material;

second patterning the third material to form a plurality of spaced blocks over the conductive material; the sidewalls of the trench having a different amount of curvature in regions between the blocks than in regions beneath the blocks; and

forming a plurality of spaced conductive lines over the spaced blocks, the conductive lines extending in a direction substantially perpendicular to the first direction.

Claim 39 (original): The method of claim 38 wherein further comprising removing at least some of the second magnetic material from between the spaced blocks.

Claim 40 (original): The method of claim 38 wherein the non-magnetic material is patterned with the third magnetic material during the second patterning.

Claim 41 (original): The method of claim 38 wherein the first magnetic material is different than the second magnetic material.

Claim 42 (original): The method of claim 38 wherein the first magnetic material is different than the second magnetic material; wherein the first magnetic material comprises cobalt, chromium and niobium; and wherein the second magnetic material comprises iron and nickel.

Claim 43 (original): The method of claim 38 further comprising removing at least some of the first magnetic material from between the spaced blocks.